

SEQUENCE LISTING

1 <110> Summar, Marshall L  
 5 Christman, Brian  
 Barr, Frederick E  
 10 <120> THERAPEUTIC METHODS EMPLOYING NITRIC OXIDE PRECURSORS  
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20	Ser Asn Ala Glu Phe Gln Met Leu Arg Arg Thr Ser Ile Asn Val Val			
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Gly Phe Gly Phe Thr Asn Val Thr Ala His Gln Lys Trp Lys Phe Ser  
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Arg Pro Gly Ile Arg Leu Leu Ser Val Lys Ala Gln Thr Ala His Ile  
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Val Leu Glu Asp Gly Thr Lys Met Lys Gly Tyr Ser Phe Gly His Pro  
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Pro Glu Ala Ile Thr Asp Pro Ala Tyr Lys Gly Gln Ile Leu Thr Met  
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Ala Asn Pro Ile Ile Gly Asn Gly Gly Ala Pro Asp Thr Thr Ala Leu  
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Asp Glu Leu Gly Leu Ser Lys Tyr Leu Glu Ser Asn Gly Ile Lys Val  
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Ser Gly Leu Leu Val Leu Asp Tyr Ser Lys Asp Tyr Asn His Trp Leu  
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Ala Thr Lys Ser Leu Gly Gln Trp Leu Gln Glu Glu Lys Val Pro Ala  
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Ile Tyr Gly Val Asp Thr Arg Met Leu Thr Lys Ile Ile Arg Asp Lys  
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Gly Thr Met Leu Gly Lys Ile Glu Phe Glu Gly Gln Pro Val Asp Phe  
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Val Asp Pro Asn Lys Gln Asn Leu Ile Ala Glu Val Ser Thr Lys Asp  
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Cys Gly Ile Lys Asn Asn Val Ile Arg Leu Leu Val Lys Arg Gly Ala  
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Glu Val His Leu Val Pro Trp Asn His Asp Phe Thr Lys Met Glu Tyr  
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Asp Gly Ile Leu Ile Ala Gly Gly Pro Gly Asn Pro Ala Leu Ala Glu  
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Pro Leu Ile Gln Asn Val Arg Lys Ile Leu Glu Ser Asp Arg Lys Glu  
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20	His Gly Tyr Ala Leu Asp Asn Thr Leu Pro Ala Gly Trp Lys Pro Leu	340	345	350	
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	Asp Glu Ile Glu Lys Leu Thr Tyr Ile Asp Lys Trp Phe Leu Tyr Lys			
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	Met Arg Asp Ile Leu Asn Met Glu Lys Thr Leu Lys Gly Leu Asn Ser			
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	Phe Asp Glu Cys Asp Lys Leu Tyr Phe Glu Glu Leu Ser Leu Glu			
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	Arg Ile Leu Asp Ile Tyr His Gln Glu Ala Cys Gly Gly Cys Ile			
	1040	1045	1050	
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	Ile Ser Val Gly Gly Gln Ile Pro Asn Asn Leu Ala Val Pro Leu			
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	Tyr Lys Asn Gly Val Lys Ile Met Gly Thr Ser Pro Leu Gln Ile			
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Arg Pro Ser Tyr Val Leu Ser Gly Ser Ala Met Asn Val Val Phe  
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Ser Gln Glu His Pro Val Val Leu Thr Lys Phe Val Glu Gly Ala  
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Phe Pro Phe Val Ser Lys Thr Leu Gly Val Asp Phe Ile Asp Val  
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Pro Thr Leu Asp His Pro Ile Ile Pro Ala Asp Tyr Val Ala Ile  
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Tyr Pro Glu Ala Ile Thr Asp Pro Ala Tyr Lys Gly Gln Ile Leu Thr	
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10	tat gat ggg att ttg atc gcg gga gga ccg ggg aac cca gct ctt gca Tyr Asp Gly Ile Leu Ile Ala Gly Gly Pro Gly Asn Pro Ala Leu Ala 260 265 270	936
15	gaa cca cta att cag aat gtc aga aag att ttg gag agt gat cgc aag Glu Pro Leu Ile Gln Asn Val Arg Lys Ile Leu Glu Ser Asp Arg Lys 275 280 285	984
20	gag cca ttg ttt gga atc agt aca gga aac tta ata aca gga ttg gct Glu Pro Leu Phe Gly Ile Ser Thr Gly Asn Leu Ile Thr Gly Leu Ala 290 295 300	1032
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30	cag cct gtt ttg aat atc aca aac aaa cag gct ttc att act gct cag Gln Pro Val Leu Asn Ile Thr Asn Lys Gln Ala Phe Ile Thr Ala Gln 320 325 330 335	1128
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40	att ttt gtg aat gtc aac gat caa aca aat gag ggg att atg cat gag Leu Phe Val Asn Val Asn Asp Gln Thr Asn Glu Gly Ile Met His Glu 355 360 365	1224
45	agc aaa ccc ttc ttc gct gtg cag ttc cac cca gag gtc acc ccg ggg Ser Lys Pro Phe Phe Ala Val Gln Phe His Pro Glu Val Thr Pro Gly 370 375 380	1272
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70	gct gta aaa gcc atg aag gaa gaa aat gtc aaa act gtt ctg atg aac Ala Val Lys Ala Met Lys Glu Glu Asn Val Lys Thr Val Leu Met Asn 450 455 460	1512
75	cca aac att gca tca gtc cag acc aat gag gtg ggc tta aag caa gcg Pro Asn Ile Ala Ser Val Gln Thr Asn Glu Val Gly Leu Lys Gln Ala 465 470 475	1560
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45	gct gat gac aat tgt gtc act gtc tgt aac atg gaa aat gtt gat gcc Ala Asp Asp Asn Cys Val Thr Val Cys Asn Met Glu Asn Val Asp Ala 640 645 650 655	2088
50	atg ggt gtt cac aca ggt gac tca gtt gtt gtg gct cct gcc cag aca Met Gly Val His Thr Gly Asp Ser Val Val Val Ala Pro Ala Gln Thr 660 665 670	2136
55	ctc tcc aat gcc gag ttt cag atg ttg aga cgt act tca atc aat gtt Leu Ser Asn Ala Glu Phe Gln Met Leu Arg Arg Thr Ser Ile Asn Val 675 680 685	2184
60	gtt cgc cac ttg ggc att gtg ggt gaa tgc aac att cag ttt gcc ctt Val Arg His Leu Gly Ile Val Gly Glu Cys Asn Ile Gln Phe Ala Leu 690 695 700	2232
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80	aac gtc gta tcc ggg aag aca tca gcc tgt ttt gaa cct agc ctg gat Asn Val Val Ser Gly Lys Thr Ser Ala Cys Phe Glu Pro Ser Leu Asp 755 760 765	2424

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30	ctt gat gag att gag aag ctc aca tac att gac aag tgg ttt ttg tat Leu Asp Glu Ile Glu Lys Leu Thr Tyr Ile Asp Lys Trp Phe Leu Tyr 865 870 875	2760
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60	gtt acc tac aat ggt cag gag cat gat gtc aat ttt gat gac cat gga Val Thr Tyr Asn Gly Gln Glu His Asp Val Asn Phe Asp Asp His Gly 960 965 970 975	3048
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35	ttc tct gag gat gag atg aaa aaa ttc cta gaa gag gcg act aga Phe Ser Glu Asp Glu Met Lys Lys Phe Leu Glu Ala Thr Arg 1145 1150 1155	3594
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	1295 1300 1305	
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	Ile Lys Ala Pro Met Phe Ser Trp Pro Arg Leu Arg Asp Ala Asp	
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	Pro Ile Leu Arg Cys Glu Met Ala Ser Thr Gly Glu Val Ala Cys	
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	Phe Gly Glu Gly Ile His Thr Ala Phe Leu Lys Ala Met Leu Ser	
	1340 1345 1350	
	aca gga ttt aag ata ccc cag aaa ggc atc ctg ata ggc atc cag	4224
	Thr Gly Phe Lys Ile Pro Gln Lys Gly Ile Leu Ile Gly Ile Gln	
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	Gln Glu Gly Gln Asn Pro Ser Leu Ser Ser Ile Arg Lys Leu Ile	
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	aga gat ggc agc att gac cta gtg att aac ctt ccc aac aac aac	4449
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	Leu Phe His Tyr Arg Gln Tyr Ser Ala Gly Lys Ala Ala	
	1490 1495 1500	
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	20 25 30	
45	 Arg Pro Gly Ile Arg Leu Leu Ser Val Lys Ala Gln Thr Ala His Ile	
	35 40 45	
50	 Val Leu Glu Asp Gly Thr Lys Met Lys Gly Tyr Ser Phe Gly His Pro	
	50 55 60	
55	 Ser Ser Val Ala Gly Glu Val Val Phe Asn Thr Gly Leu Gly Gly Tyr	
	65 70 75 80	
60	 Pro Glu Ala Ile Thr Asp Pro Ala Tyr Lys Gly Gln Ile Leu Thr Met	
	85 90 95	
65	 Ala Asn Pro Ile Ile Gly Asn Gly Gly Ala Pro Asp Thr Thr Ala Leu	
	100 105 110	
	 Asp Glu Leu Gly Leu Ser Lys Tyr Leu Glu Ser Asn Gly Ile Lys Val	
	115 120 125	
	 Ser Gly Leu Leu Val Leu Asp Tyr Ser Lys Asp Tyr Asn His Trp Leu	
	130 135 140	

Ala Thr Lys Ser Leu Gly Gln Trp Leu Gln Glu Glu Lys Val Pro Ala  
 145 150 155 160  
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Ile Tyr Gly Val Asp Thr Arg Met Leu Thr Lys Ile Ile Arg Asp Lys  
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Gly Thr Met Leu Gly Lys Ile Glu Phe Glu Gly Gln Pro Val Asp Phe  
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15 Val Asp Pro Asn Lys Gln Asn Leu Ile Ala Glu Val Ser Thr Lys Asp  
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20 Val Lys Val Tyr Gly Lys Gly Asn Pro Thr Lys Val Val Ala Val Asp  
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25 Cys Gly Ile Lys Asn Asn Val Ile Arg Leu Leu Val Lys Arg Gly Ala  
 225 230 235 240

30 Glu Val His Leu Val Pro Trp Asn His Asp Phe Thr Lys Met Glu Tyr  
 245 250 255

35 Asp Gly Ile Leu Ile Ala Gly Gly Pro Gly Asn Pro Ala Leu Ala Glu  
 260 265 270

40 Pro Leu Ile Gln Asn Val Arg Lys Ile Leu Glu Ser Asp Arg Lys Glu  
 275 280 285

45 Pro Leu Phe Gly Ile Ser Thr Gly Asn Leu Ile Thr Gly Leu Ala Ala  
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50 Gly Ala Lys Thr Tyr Lys Met Ser Met Ala Asn Arg Gly Gln Asn Gln  
 305 310 315 320

55 Pro Val Leu Asn Ile Thr Asn Lys Gln Ala Phe Ile Thr Ala Gln Asn  
 325 330 335

60 His Gly Tyr Ala Leu Asp Asn Thr Leu Pro Ala Gly Trp Lys Pro Leu  
 340 345 350

65 Phe Val Asn Val Asn Asp Gln Thr Asn Glu Gly Ile Met His Glu Ser  
 355 360 365

70 Lys Pro Phe Phe Ala Val Gln Phe His Pro Glu Val Thr Pro Gly Pro  
 370 375 380

75 Ile Asp Thr Glu Tyr Leu Phe Asp Ser Phe Phe Ser Leu Ile Lys Lys  
 385 390 395 400

80 Gly Lys Ala Thr Thr Ile Thr Ser Val Leu Pro Lys Pro Ala Leu Val  
 405 410 415

Ala Ser Arg Val Glu Val Ser Lys Val Leu Ile Leu Gly Ser Gly Gly  
 420 425 430  
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Leu Ser Ile Gly Gln Ala Gly Glu Phe Asp Tyr Ser Gly Ser Gln Ala  
 435 440 445

10 Val Lys Ala Met Lys Glu Glu Asn Val Lys Thr Val Leu Met Asn Pro  
 450 455 460

15 Asn Ile Ala Ser Val Gln Thr Asn Glu Val Gly Leu Lys Gln Ala Asp  
 465 470 475 480

20 Thr Val Tyr Phe Leu Pro Ile Thr Pro Gln Phe Val Thr Glu Val Ile  
 485 490 495

25 Lys Ala Glu Gln Pro Asp Gly Leu Ile Leu Gly Met Gly Gly Gln Thr  
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30 Ala Leu Asn Cys Gly Val Glu Leu Phe Lys Arg Gly Val Leu Lys Glu  
 515 520 525

35 Tyr Gly Val Lys Val Leu Gly Thr Ser Val Glu Ser Ile Met Ala Thr  
 530 535 540

40 Glu Asp Arg Gln Leu Phe Ser Asp Lys Leu Asn Glu Ile Asn Glu Lys  
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Ile Ala Pro Ser Phe Ala Val Glu Ser Ile Glu Asp Ala Leu Lys Ala  
 565 570 575

45 Ala Asp Thr Ile Gly Tyr Pro Val Met Ile Arg Ser Ala Tyr Ala Leu  
 580 585 590

50 Gly Gly Leu Gly Ser Gly Ile Cys Pro Asn Arg Glu Thr Leu Met Asp  
 595 600 605

55 Leu Ser Thr Lys Ala Phe Ala Met Thr Asn Gln Ile Leu Val Glu Lys  
 610 615 620

60 Ser Val Thr Gly Trp Lys Glu Ile Glu Tyr Glu Val Val Arg Asp Ala  
 625 630 635 640

Asp Asp Asn Cys Val Thr Val Cys Asn Met Glu Asn Val Asp Ala Met  
 645 650 655

65 Gly Val His Thr Gly Asp Ser Val Val Ala Pro Ala Gln Thr Leu  
 660 665 670

Ser Asn Ala Glu Phe Gln Met Leu Arg Arg Thr Ser Ile Asn Val Val  
 675 680 685

5	Arg His Leu Gly Ile Val Gly Glu Cys Asn Ile Gln Phe Ala Leu His	690	695	700	
10	Pro Thr Ser Met Glu Tyr Cys Ile Ile Glu Val Asn Ala Arg Leu Ser	705	710	715	720
15	Arg Ser Ser Ala Leu Ala Ser Lys Ala Thr Gly Tyr Pro Leu Ala Phe	725	730	735	
20	Ile Ala Ala Lys Ile Ala Leu Gly Ile Pro Leu Pro Glu Ile Lys Asn	740	745	750	
25	Val Val Ser Gly Lys Thr Ser Ala Cys Phe Glu Pro Ser Leu Asp Tyr	755	760	765	
30	Met Val Thr Lys Ile Pro Arg Trp Asp Leu Asp Arg Phe His Gly Thr	770	775	780	
35	Ser Ser Arg Ile Gly Ser Ser Met Lys Ser Val Gly Glu Val Met Ala	785	790	795	800
40	Ile Gly Arg Thr Phe Glu Glu Ser Phe Gln Lys Ala Leu Arg Met Cys	805	810	815	
45	His Pro Ser Ile Glu Gly Phe Thr Pro Arg Leu Pro Met Asn Lys Glu	820	825	830	
50	Trp Pro Ser Asn Leu Asp Leu Arg Lys Glu Leu Ser Glu Pro Ser Ser	835	840	845	
55	Thr Arg Ile Tyr Ala Ile Ala Lys Ala Ile Asp Asp Asn Met Ser Leu	850	855	860	
60	Asp Glu Ile Glu Lys Leu Thr Tyr Ile Asp Lys Trp Phe Leu Tyr Lys	865	870	875	880
65	Met Arg Asp Ile Leu Asn Met Glu Lys Thr Leu Lys Gly Leu Asn Ser	885	890	895	
70	Glu Ser Met Thr Glu Glu Thr Leu Lys Arg Ala Lys Glu Ile Gly Phe	900	905	910	
75	Ser Asp Lys Gln Ile Ser Lys Cys Leu Gly Leu Thr Glu Ala Gln Thr	915	920	925	
80	Arg Glu Leu Arg Leu Lys Lys Asn Ile His Pro Trp Val Lys Gln Ile	930	935	940	
85	Asp Thr Leu Ala Ala Glu Tyr Pro Ser Val Thr Asn Tyr Leu Tyr Val	945	950	955	960

Thr Tyr Asn Gly Gln Glu His Asp Val Asn Phe Asp Asp His Gly Met  
 965 970 975  
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Met Val Leu Gly Cys Gly Pro Tyr His Ile Gly Ser Ser Val Glu Phe  
 980 985 990  
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Asp Trp Cys Ala Val Ser Ser Ile Arg Thr Leu Arg Gln Leu Gly Lys  
 995 1000 1005  
 15

Lys Thr Val Val Val Asn Cys Asn Pro Glu Thr Val Ser Thr Asp  
 1010 1015 1020  
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Phe Asp Glu Cys Asp Lys Leu Tyr Phe Glu Glu Leu Ser Leu Glu  
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 25

Arg Ile Leu Asp Ile Tyr His Gln Glu Ala Cys Gly Gly Cys Ile  
 1040 1045 1050  
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Ile Ser Val Gly Gly Gln Ile Pro Asn Asn Leu Ala Val Pro Leu  
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Tyr Lys Asn Gly Val Lys Ile Met Gly Thr Ser Pro Leu Gln Ile  
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Asp Arg Ala Glu Asp Arg Ser Ile Phe Ser Ala Val Leu Asp Glu  
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Leu Lys Val Ala Gln Ala Pro Trp Lys Ala Val Asn Thr Leu Asn  
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Glu Ala Leu Glu Phe Ala Lys Ser Val Asp Tyr Pro Cys Leu Leu  
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Arg Pro Ser Tyr Val Leu Ser Gly Ser Ala Met Asn Val Val Phe  
 1130 1135 1140  
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Ser Glu Asp Glu Met Lys Lys Phe Leu Glu Glu Ala Thr Arg Val  
 1145 1150 1155  
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Ser Gln Glu His Pro Val Val Leu Thr Lys Phe Val Glu Gly Ala  
 1160 1165 1170  
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Arg Glu Val Glu Met Asp Ala Val Gly Lys Asp Gly Arg Val Ile  
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